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| 10/734,037 | 12/11/2003 | Giora Biran | FIS920030289US1 | 8778 |

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| EXAMINER |
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GOODCHILD, WILLIAM J

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| ART UNIT | PAPER NUMBER |
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2145

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| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

01/25/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

| | | | |
|------------------------------|---|-------------------------------------|--|
| Office Action Summary | Application No. 10/734,037 | Applicant(s) BIRAN ET AL. | |
| | Examiner WILLIAM J. GOODCHILD | Art Unit 2145 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 16 can be considered to be software in accordance with applicants specification [page 55, paragraph 129, lines 5-7, "It is understood that the various devices, modules, mechanisms and systems described herein may be realized in hardware, software, or a combination of hardware and software, and may be compartmentalized other than as shown.", lines 14-19, "Computer program, software program, program, program product, or software, in the present context mean any expression, in any language, code or notation, of a set of instructions intended to cause a system having an information processing capability to perform a particular function either directly or after the following: ...", claim 16 comprises 'program code']. In order for a claim to be statutory, it must fall within a process, machine, manufacture, or a composition of matter. Software does not fall within a statutory category since it is not a series of steps or acts to constitute a process, not a mechanical device or combination of mechanical devices to constitute a machine, not a tangible physical article or object which is some form of matter to be a product and constitute a manufacture, and not a composition of two or more substances to constitute a composition of matter.

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Claims 17-22, which are dependent on claim 16, are rejected for the same reason

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagan et al., (US Publication No. 2002/0152315), (hereinafter Kagan), and further in view of Elzur, (US Publication No. 2003/0172342).

Regarding claims 1, 9 and 16, Kagan discloses storing information regarding each out-of-order RDMA message on a per TCP hole basis [paragraphs 24 and 46]; and delivering the plurality of RDMA messages in-order [paragraph 24]. Kagan does not specifically disclose placing each out-of-order RDMA message to a buffer. However, Elzur, in the same field of endeavor discloses placing the TCP segment received out of order in a temporary buffer [Elzur, paragraph 42, lines 27-30]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a buffer to place out of order segments in order to re-order the segments to sent them on.

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In reference to claims 2, 10 and 17, Kagan further discloses storing a number of pending RDMA Read Response messages waiting for a doorbell ring in a connection context on a per TCP hole basis [paragraph 46]; and

ringing the doorbell of a network interface controller (NIC) that each of the number of pending RDMA read response messages have been posted to a respective work queue element (WQE) of a read queue upon closing of a respective TCP hole [paragraphs 10, 46 and 47].

In reference to claim 3, Kagan further discloses processing each WQE [paragraph 48].

In reference to claims 4, 11 and 18, Kagan further discloses for each RDMA Send message of a TCP hole, placing RDMA Send message specific information to a work queue element (WQE) associated with the respective RDMA Send message [paragraph 47].

In reference to claims 5, 12 and 19, Kagan further discloses placing the CQE to a completion queue (CQ) upon closing of the TCP hole [paragraph 24].

In reference to claims 6, 13 and 20, Kagan further discloses a number of CQEs is equal to a number of RDMA Send messages of the TCP hole [paragraph 10, 24].

In reference to claims 7, 14 and 21, Kagan further discloses RDMA Send message specific information is retrieved from a respective WQE upon a Poll-for-Completion request by an RDMA verb interface [paragraph 57].

In reference to claims 8, 15 and 22, Kagan further discloses storing a number of completed RDMA Read Response messages on a per TCP hole basis [paragraphs 48, 49 and 57]; and

reporting completion of RDMA Read work requests upon closing of the TCP hole [paragraphs 57 and 58].

Response to Arguments

4. Applicant's arguments filed 11/07/2007 have been fully considered but they are not persuasive.

A – Applicant argues “Applicants have amended independent claims 9 and 16 and respectfully content that the claims are directed towards statutory matter.”

A – Claim 16 is still considered to be software. The preamble of claim 16 does have ‘computer useable medium’, but the specification does not define what computer useable medium is. In addition, claim 16 refers to program code configured... in each limitation of the claim. Additionally, applicants specification of paragraph 129, lines 5-7 and 14-19 refer to the invention being software.

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5. Applicant's arguments, filed 11/07/2007, with respect to the rejection(s) of claim(s) 1-22 under Kagan as a 102 rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Elzur. Further, the 101 rejection of claim 9 is withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. GOODCHILD whose telephone number is (571)270-1589. The examiner can normally be reached on Monday - Friday / 9:00 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WJG
01/19/2008

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145